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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER

CASCHERA, ANTONIO A

ART UNIT	PAPER NUMBER
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2676

DATE MAILED: 05/16/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/865,200

Applicant(s)

PARK, SANG-RYUL

Examiner

Antonio A Caschera

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 20 December 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-5 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-5 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 24 May 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>01/06/05</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Priority

1. Acknowledgment is made of applicant's claim for foreign priority under 35 U.S.C. 119(a)-(d). The certified copy has been filed in the pending application.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Glen (U.S. Patent 6,268,847 B1), Iwamura (U.S. Patent 5,844,623) and Kuwajima et al. (U.S. Patent 6,339,422 B1).

In reference to claims 1 and 4, Glen discloses a video graphics method and apparatus for improving the quality of video data displayed on a display device (see lines 1-5 of abstract) which the office interprets functionality equivalent to the color display driving apparatus of applicant's claim. Glen also discloses the system receiving two separate sets of data, RGB and YUV (see #22 and 24 of Figure 1). Glen discloses the format of the RGB data to be in the form of 8-bits (see column 2, lines 33-37) which the office interprets as in a digital format. Glen also discloses the incoming YUV data produced from a cable box, satellite or DVD player (see column 1, lines 25-29) which the office interprets as in a digital format. Glen discloses an RGB

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conversion module (see #12 of Figure 1) receiving RGB data and a first color base conversion module (see #14 of Figure 1) receiving YUV data, these modules preparing the data for later mixing (see column 3, lines 10-13, 34-36, 59-62 and #26, 28 and 16 of Figure 1). The office interprets the above disclosed conversion modules to inherently comprise of some sort of first and second memories storing the RGB and YUV data, respectively, in order to temporarily hold data for performing conversions upon, such as, for example, "scratchpad" memories or caches. Glen also discloses the first color base conversion to perform YUV-to-RGB conversion (see column 3, lines 34-36 and #24, 14, 28 of Figure 1). Note, Glen does not explicitly disclose the video processing methods and apparatus applied to a portable mobile telephone display however, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the methods and apparatus of Glen within an LCD of a portable telephone since it has been held that making a device portable is not patently distinguishable over other devices (*In re Lindberg*, 194 F.2d 732, 93 USPQ 23 (CCPA 1952)). Glen does not explicitly disclose an OSD controller however Iwamura does. Iwamura discloses an OSD controller in a television receiver/decoder (see #6 of Figure 2). Iwamura also discloses the OSD block to construct the on screen display information and assign appropriate colors to each pixel using a color look-up table (see column 3, lines 59-61). Iwamura discloses a mixer implemented to mix RGB data with RGB data converted from YUV data via a matrix converter (see #43, 44 and matrix converted #45, mixer #47 and #11 of Figure 2). Iwamura also discloses displaying the mixed data onto a display (see #32 of Figure 2). Note although Iwamura does not explicitly disclose the OSD to perform the writing of color data to their respective memories, mixing the RGB and converted RGB data and displaying the mixed data, it would have been obvious to one of ordinary skill in

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the art at the time the invention was made to implement an OSD controller to perform the above tasks as it is a matter of design choice as seen by the office as other controllers/processors could implement the writing and mixing of data. Further, the above operations are standard tasks performed on conventional computer systems by some sort of graphics adapters or controllers as disclosed by Glen above. It would have been obvious to one of ordinary skill in the art at the time the invention was made to implement the RGB and YUV processing, including color conversions and storing techniques, of Glen with the on-screen display circuitry of Iwamura in order to improve accuracy when converting YUV-to-RGB data, enhancing on-screen display data when mixed with video data and displaying them both together on a display (see column 2, lines 8-12 of Glen). Neither Glen nor Iwamura explicitly disclose a timing signal generator generating a timing signal for alternately enabling first and second memories. Kuwajima et al. discloses a single clock signal source providing a single clock signal to VRAM memory, divided into first and second areas, via a variable frequency control circuit in a display control circuit of a display device (see column 4, lines 41-49, column 5, lines 20-25 and #3, 5, 7 of Figure 2). It would have been obvious to one of ordinary skill in the art at the time the invention was made to implement the RGB and YUV processing and storing techniques of Glen and the on-screen display circuitry of Iwamura with the memory timing generation techniques of Kuwajima et al. in order to display multiple types of data on a display device without increasing power consumption and therefore, creating a more efficient device (see column 3, lines 53-58 of Kuwajima et al.).

In reference to claim 2, Glen, Iwamura and Kuwajima et al. disclose all of the claim limitations as applied to claim 1 above in addition, Iwamura discloses an expander unit which

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increases the size of video data, in particular, enlarges the horizontal pixel number by four-thirds the size to become compatible with the size of the selected aspect ratio of the display (see columns 3-4, lines 64-6). This expanded data is then passed onto a RGB converter to convert the data to RGB format (see #60 and #11 of Figure 2). Iwamura does not explicitly disclose the data being formatted to be of YUV color space type however it would have been obvious to one of ordinary skill in the art at the time the invention was made to utilize an expander like hardware with YUV data in order to process and display a compatible size of color data onto a display. Further, the Iwamura reference discloses the theory of formatting data to be compatible with a display which the office believes the scope of claim 2 is directed more towards rather than the type of data being formatted.

In reference to claim 3, Glen, Iwamura and Kuwajima et al. disclose all of the claim limitations as applied to claim 1 above. Iwamura discloses a mixer implemented to mix RGB data with RGB data converted from YUV data via a matrix converter (see #43, 44 and matrix converted #45, mixer #47 and #11 of Figure 2). Note although the mixer of Iwamura is not disclosed to be comprised within an OSD controller, it would have been obvious to one of ordinary skill in the art at the time the invention was made to implement the above hardware in an OSD controller as the location of where the hardware is placed is a matter of design choice, preferred by the inventor, as seen by the office (*In re Larson*, 340 F.2d 965, 968, 144 USPQ 347, 349 (CCPA 1965)).

In reference to claim 5, Glen, Iwamura and Kuwajima et al. disclose all of the claim limitations as applied to claim 4 above. Glen discloses the system receiving two separate sets of data, RGB and YUV (see #22 and 24 of Figure 1). Glen discloses an RGB conversion module

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(see #12 of Figure 1) receiving RGB data and a first color base conversion module (see #14 of Figure 1) receiving YUV data, these modules preparing the data for later mixing (see column 3, lines 10-13, 34-36, 59-62 and #26, 28 and 16 of Figure 1).

Response to Arguments

3. Applicant's arguments filed 12/20/04 have been fully considered but they are not persuasive.

In reference to claims 1-5, Applicant argues that the Examiner's assertion of Glen, inherently comprising of memories for storing RGB and YUV data, is incorrect (see page 2, 5th paragraph of Applicant's Remarks). Even further, Applicant points out that even if this assertion of inherency is correct, since the YUV data of Glen is converted and output as RGB data, YUV data is not stored (see page 2, 6th paragraph - page 3 of Applicant's Remarks). The Office disagrees and points to column 1, lines 52-60 of Glen, wherein Glen discloses equations used to convert from YUV to RGB data. Glen also discloses that these equations are implemented by the "first color base conversion module," the unit that converts YUV to RGB data (see column 3, lines 55-58). Referring to the above mentioned equations, various arithmetic functions are performed upon the YUV data including additions, multiplications and subtractions (see column 1, lines 52-60). The Office firmly believes the "first color base conversion module" to inherently comprise of some sort of memory or register for storing YUV input data since multiple arithmetic computations are performed on the YUV data, which is further disclosed to be in bit format (see column 2, lines 30-37). Performing such additions, subtractions and multiplications upon bit form data requires some sort of register or memory for holding data, at least

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temporarily. For example, commonly known computer hardware techniques perform multiplications using bits of data by left shifting the bits of data so that bit positions, within a register, are altered. Further, Glen also discloses the "RGB conversion module" used in expanding input RGB data, includes firmware for processing the RGB data, the firmware defined as a processing module and memory (see column 3, lines 18-33). The Office believes that since complex equations, performing arithmetic computations on both RGB and YUV input bit data, are performed by the conversion modules of Glen, Glen inherently must disclose some sort of memories or registers for, at least temporarily, storing input data to perform such arithmetic computations thereupon. Since, the use of memories for storing different format color data is inherently disclosed by Glen, such a limitation cannot deem the claims allowable over the prior art.

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event,

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however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Antonio Caschera whose telephone number is (571) 272-7781. The examiner can normally be reached Monday-Thursday and alternate Fridays between 7:30 AM and 5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Matthew Bella, can be reached at (571) 272-7778.

Any response to this action should be mailed to:

Commissioner of Patents and Trademarks

Washington, D.C. 20231

or faxed to:

(703) 872-9314 (for Technology Center 2600 only)

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Technology Center 2600 Customer Service Office whose telephone number is (703) 306-0377.



MATTHEW C. BELLA
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600

aac

5/7/05